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REMARKS

Applicant respectfully requests that the instant application be reconsidered in light of the above amendments and the following remarks.

Summary:

Claims 1, 2, 3, 4, 5, 6, 11, 12, 13, 14, 15, 16, 23, 24, 25, 26, 27, and 28 have been amended.

New Claims 30 and 31 have been added.

Claims 7, 17, and 29 have been cancelled.

Allowable Subject Matter

Applicant wishes to thank Examiner for finding Claim 14 allowable. Applicant has added New Claim 30 wherein Claim 14 is rewritten in independent form to include the limitations recited in Claim 11 from which Claim 14 depends.

Claim Objections

Consistent with Examiner's suggestion, Claims 1 and 11 have been amended to recite "a ratio of g" to further clarify Applicant's presently claimed invention.

Claims 4 and 14 have been objected to for merely defining R¹⁴, R¹⁵ and R¹⁶ without indication that R⁸ is any particular embodiment. Claims 4 and 14 further limit the recited substituents which may or may not be present depending on the value of R⁸. In the interest of clarity, Applicant has amended Claims 4 and 14 to recite "wherein R¹⁴, R¹⁵ and R¹⁶, when present, are" to further clarify Applicant's presently claimed invention.

Claims 6 and 16 have been objected to regarding the meaning of m and n, and the meaning of R⁹ and R¹⁰. Applicant has amended Claims 1 and 11, from which Claims 6 and 16 depend, to further clarify that R⁸ may not be hydrogen (i.e., a bridging hydrogen). Values m and n represent the stoichiometric values of the groups attached to the indenyl ring as disclosed. Since m and n may be 0, 1, or 2, the groups may or may not be present, yet R⁸ is present and may be any of the moieties as recited in the claims. Accordingly, when m and n are each 0 (zero), R⁸ represents the bridging group. Applicant has amended Claims 6 and 16 to further clarify that R⁹ and R¹⁰, when present, are hydrogen.

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Claims 1, 5, 11, and 15 have been objected to for reciting a bridging hydrogen atom. Claims 1, 5, 11, and 15 have been amended to remove the recitation that R⁸ may be hydrogen, and thus the claims have been amended to remove this as a possibility and thus correct this obvious typographical error.

New Claim 31 has been added to further limit the recited metallocene compound to preferred embodiments. Support for this claim may be found beginning at Page 17, line 10 to Page 18, line 18 of the application as filed.

Claim Rejections Under 35 USC § 103

Claims 1-6, 8-13, 15, 16, and 18-28 have been rejected under 35 U.S.C. §103 as being unpatentable over Winter.

Examiner admits that Winter fails to disclose or suggest a process for producing a propylene copolymer having all of Applicant's recited properties. Winter is alleged to recite the same catalyst and the same process as recited by Applicant, and thus Examiner contends that Applicant's recited polymer properties are inherent in the polymers of Winter.

Applicant has amended Claims 1 and 11 to further clarify that the catalyst comprises hafnium, and that in addition to the copolymer produced having a molecular weight greater than 20,000, the copolymer also comprises 5 to 28 wt% comonomer. Claims 25-28 have been amended to further limit the comonomer content. Support for these amendments may be found on page 19, lines 21-24 of the application as filed. Applicant's disclosure is directed to a copolymer having a specifically broadened composition distribution, as captured in the g' ratio, and characterized by a substantial increase in comonomer (e.g., ethylene) in the high Mw portion. Broadening of molecular weight distribution also occurs.

This is in contrast to teachings and examples in the art utilizing metallocene catalysts. Indeed, metallocene catalysts are known in the art for producing uniform polymers having a narrow molecular weight distribution. Applicant has unexpectedly discovered that by employing a bridged bis-indenyl metallocene comprising hafnium with greater than 5 wt% of a comonomer (e.g., ethylene) a propylene copolymer is produced which has a broadened composition distribution when the copolymer has a

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molecular weight greater than or equal to 20,000 g/mol. This broad molecular weight distribution is recited as the g' ratio, and Applicant's Figures 1 and 2 graphically demonstrate this invention.

Winter fails to disclose a polymer having a high enough molecular weight to achieve Applicant's recited g' ratio. Furthermore, Winter fails to limit the process to require a catalyst comprising hafnium, which Applicant unexpectedly discovered to be capable of producing the recited polymer having the broadened composition distribution. In addition, Winter fails to disclose or suggest incorporation of 5 wt% or more of a comonomer, as Applicant unexpectedly discovered is necessary to produce the recited copolymer. Accordingly, Winter fails to disclose or suggest all of the non-obvious limitations of Applicant's presently claimed process. As such, Winter fails to obviate Applicant's presently claimed invention. Removal of the rejection is respectfully requested.

Applicant respectfully requests the rejection of the claims be removed, and the claims, as amended, be passed to allowance.

Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712.

7-24-06
Date:

Respectfully submitted,



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